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Bulletin 162 **September, 1912**

NEW HAMPSHIRE
AGRICULTURAL EXPERIMENT STATION
DEPARTMENT OF CHEMISTRY

THE FERTILIZER INSPECTION FOR 1912

MADE FOR THE
STATE BOARD OF AGRICULTURE

By B. E. Curry and T. O. Smith.

NEW HAMPSHIRE COLLEGE
OF
AGRICULTURE AND MECHANIC ARTS
DURHAM, N. H.

NEW HAMPSHIRE COLLEGE OF AGRICULTURE AND THE MECHANIC ARTS.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

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The bulletins of the Experiment Station are published at irregular intervals and are sent *free* to all residents of New Hampshire requesting them.

INSPECTION OF FERTILIZERS FOR 1912.

The samples of fertilizers for the 1912 inspection were collected by Mr. H. B. Tuttle, under the direction of the State Board of Agriculture, and turned over to the State Agricultural Experiment Station for analysis. Aside from duplicates one hundred and eighty samples were drawn; of these, eighteen represent raw fertilizer materials and include muriate and sulfate of potash, acid phosphate, basic slag meal, ground bone, blood and nitrate of soda. This is the largest number of samples ever drawn in the state in one year.

The inspector could not locate all of the brands which had been licensed. However, the ones not found were not generally in use.

The samples drawn and herein reported represent practically all grades of prepared fertilizers from the best that are made down to some of the poorest. Also, excepting tankage and sulfate of ammonia, the raw unmixed materials are well represented. Judging from the distribution of the various mixed fertilizers and raw materials, the consumer has had a considerable latitude in the choice of quality.

The cost of fertilizers is a very important factor in present agricultural processes. The consumer is still buying "shot-gun charges" of fertilizers for his crops. Nearly all of the prepared fertilizers, regardless of the soils or crops for which they are to be used, contain nitrogen, phosphoric acid, and potash in large or small amounts. The consumer is in need of more information concerning the value of the various fertilizer constituents for his specific needs. More definite information might enable him to eliminate some of these constituents for certain

crops and thereby have greater profits. This information is best obtained first hand through experience and observation from the use of various fertilizer constituents on particular crops. A demand for special grades of fertilizers would be quickly met by the manufacturers. The writers have reason to believe that for certain crops most of the increased yield is produced by some one fertilizer constituent. Under such conditions the cost of the ineffective constituents is such as to wipe out or reduce the profits that might otherwise be obtained. There are now on the market many fertilizers for special crops. The fact that a fertilizer is a "Special for Potatoes" by name may offer no recommendation or argument for its purchase for that purpose. The same material may be offered, under a different name, for corn or some other crop. Also the consumer should not lose sight of the fact that potato fertilizers vary widely in their compositions. It is well enough to keep the name of the brand in mind, but it is of much more importance to scrutinize the guarantee and at the same time bear in mind the needs of the crop and soil in the light of experience and observations.

Nitrogen is the most important fertilizer constituent and unfortunately the most expensive. Most of our New Hampshire soils are relatively poor in organic matter and therefore deficient in the amount of nitrogen which can be made available for crops. In many localities cultivation of the soil has been neglected and bacterial action has become limited. Because of these conditions fertilizers rich in nitrogen are generally more effective than others. On the other hand, our soils are very rich in potash. It so happens that potash is the least expensive of the fertilizer constituents and for some crops the least effective when used as a fertilizer. Under some conditions where cultivation is good the returns from the use of potash fertilizers are very slight. Because of these conditions and facts the writers wish to point out the necessity of

buying fertilizers more on account of the guaranteed content and in accordance with the results and observations already at hand.

Messrs. J. E. Robinson, D. B. Keyes, G. F. Lane and P. L. Gowen have assisted in the preparation of the following data.

Composition of Commercial Fertilizers Sampled and Analyzed in 1912.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
AMERICAN AGRICULTURAL CHEMICAL CO., New York City.													
Grass and Lawn Top-Dressing	3.24	.23	3.47	3.91	3.72	2.63	6.35	5.00	.62	6.97	6.00	3.41	2.00
Fine Ground Bone	.....	.....	2.48	2.47	.....	.....	.....	.....	.....	24.44	22.88	.....	.....
Grass and Oats Fertilizer	.....	.....	.....	.....	8.62	2.54	11.16	11.00	.93	12.09	12.00	2.13	2.00
High Grade Fertilizer with 10% Potash	1.28	1.20	2.48	2.47	3.73	2.79	6.52	6.00	2.81	9.33	7.00	10.32	10.00
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.80	49.00
Nitrate of Soda	.....	.....	15.27	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
14% Plain Super-Phosphate	.....	.....	.....	.....	11.43	2.95	14.38	14.00	1.16	15.54	15.00	.....	.....
Special Grass and Garden Mixture	3.43	3.46	6.89	8.43	1.40	4.97	6.37	6.25	2.28	8.65	7.25	8.64	8.25
Special Vegetable Guano	1.85	1.45	3.30	3.29	6.86	1.64	8.50	8.00	.54	9.04	9.00	7.19	7.00
Bradley's Complete Manure for Corn and Grain	2.23	1.10	3.33	3.29	5.07	3.04	8.11	8.00	1.99	10.10	9.00	7.42	7.00
Bradley's Complete Manure for Grass and Grain	3.70	.21	3.91	4.94	3.12	2.43	5.55	4.00	.50	6.05	6.00	6.40	6.00
Bradley's Complete Manure for Potatoes and Vegetables	2.07	.97	3.04	3.29	5.55	2.60	8.15	8.00	2.06	10.21	9.00	7.58	7.00
Bradley's Complete Manure with 10% Potash	1.86	1.37	3.23	3.29	4.95	1.43	6.38	6.00	1.60	7.98	7.00	10.47	10.00
Bradley's Corn Phosphate	.23	2.00	2.23	2.06	5.97	2.11	8.08	8.00	1.99	10.07	9.00	1.79	1.50
Bradley's Eclipse Phosphate for all crops	.48	.85	1.33	1.03	4.81	3.55	8.36	8.00	3.32	11.68	9.00	2.33	2.00
Bradley's Potato Fertilizer	.98	1.26	2.24	2.06	5.46	3.27	8.73	8.00	2.67	11.40	9.00	3.57	3.00
Bradley's Potato Manure	1.57	.95	2.52	2.47	4.67	2.48	7.15	6.00	2.72	9.87	7.00	5.08	5.00
Bradley's Seeding-Down Manure	.28	2.23	2.51	2.47	6.37	2.80	9.17	9.00	2.74	11.91	10.00	2.15	2.00
Bradley's XL Super-Phosphate of Lime	1.30	1.24	2.54	2.47	6.21	2.93	9.14	9.00	2.48	11.62	10.00	2.46	2.00
Clarke's Cove Potato Fertilizer	1.16	.98	2.14	2.06	5.67	2.46	8.13	8.00	1.34	9.47	9.00	3.11	3.00
Cleveland Fertilizer for all crops	.34	.99	1.33	1.03	5.14	2.96	8.10	8.00	1.97	10.07	9.00	2.38	2.00
Cleveland Potato Phosphate	1.44	.59	2.06	2.06	6.76	2.06	8.82	8.00	1.06	9.88	9.00	3.20	3.00
Cleveland Super-Phosphate	.10	1.97	2.07	2.06	5.10	3.09	8.19	8.00	3.72	11.91	9.00	1.64	1.50
Crocker's New Rival Ammoniated Super-Phospate	.21	1.02	1.23	1.03	6.18	2.55	8.73	8.00	2.27	11.00	9.00	2.22	2.00
Crocker's Special Potato Manure	1.71	1.39	3.10	3.29	2.69	3.10	5.79	6.00	2.27	8.00	7.00	11.65	10.00

Cumberland Potato Fertilizer	1.37	.93	2.30	2.06	4.11	4.07	8.18	8.00	1.84	10.02	9.00	3.26	3.00
Cumberland Super-Phosphate	1.19	.96	2.15	2.06	5.32	2.90	8.22	8.00	1.66	9.88	9.00	2.19	1.50
Darling's Blood, Bone and Potash	2.45	1.73	4.18	4.11	5.35	2.13	7.48	7.00	1.26	8.74	8.00	7.48	7.00
Darling's Farm Favorite	1.53	.79	2.12	2.06	5.69	2.49	8.18	8.00	1.24	9.42	9.00	3.12	3.00
Darling's General Fertilizer	.35	1.12	1.47	1.23	4.52	1.86	6.38	6.00	2.91	9.29	7.00	3.47	3.00
Darling's Potato Manure	1.71	.69	2.40	2.47	4.52	2.57	7.09	6.00	1.38	8.47	7.00	5.08	5.00
Great Eastern Garden Special	1.75	1.41	3.16	3.29	5.57	2.89	8.46	8.00	1.56	10.04	9.00	8.22	7.00
Great Eastern General Fertilizer	.35	.78	1.13	.82	6.11	2.71	8.82	8.00	1.64	10.46	9.00	4.31	4.00
Great Eastern Northern Corn Special	.03	2.04	2.07	2.06	4.22	3.79	8.11	8.00	1.53	9.54	9.00	2.13	1.50
Great Eastern Potato Manure	.14	1.92	2.06	2.06	5.86	2.46	8.32	8.00	1.99	10.31	9.00	3.38	3.00
Packers' Union Potato Manure	1.29	.97	2.26	2.06	5.11	2.89	8.00	8.00	1.66	9.66	9.00	6.16	6.00
Packer's Union Universal Fertilizer	.39	.64	1.03	.82	4.96	3.54	8.50	8.00	1.34	9.84	9.00	4.15	4.00
Quinnipiac Corn Manure	.92	1.20	2.12	2.06	5.48	2.67	8.15	8.00	2.40	10.55	9.00	1.65	1.50
Quinnipiac Potato Phosphate	.03	2.32	2.35	2.06	5.02	3.83	8.85	8.00	2.82	11.67	9.00	3.38	3.00
Read's Farmers' Friend Super-Phosphate	1.11	.98	2.09	2.06	5.64	2.83	8.47	8.00	2.03	10.50	9.00	3.13	3.00
Read's High Grade Farmers' Friend Super-Phosphate	2.12	1.17	3.29	3.29	5.19	1.94	7.13	6.00	1.20	8.33	7.00	10.81	10.00
Read's Potato Manure	1.77	.73	2.50	2.47	4.24	2.18	6.42	6.00	1.02	7.44	7.00	11.65	10.00
Read's Standard Super-Phosphate	.06	.99	1.05	.82	5.02	3.48	8.50	8.00	1.75	10.25	9.00	3.45	4.00
Soluble Pacific Guano	1.47	.81	2.28	2.06	5.36	3.06	8.42	8.00	1.91	10.33	9.00	2.34	1.50
Pacific Potato Special	1.47	.70	2.17	2.06	6.32	2.33	8.65	8.00	1.10	9.75	9.00	3.19	3.00
Williams & Clark American Potato Manure	1.19	1.01	2.20	2.06	6.30	1.85	8.15	8.00	1.73	9.88	9.00	3.49	3.00
M. E. Wheeler Co., Rutland, Vt., of the American Agricultural Chemical Co., New York.													
Crocker's Ammoniated Corn Phosphate	.94	1.16	2.10	2.06	5.79	2.47	8.26	8.00	2.10	10.36	9.00	1.75	1.50
Crocker's Potato, Hop and Tobacco Phosphate	.62	1.59	2.21	2.06	5.85	2.70	8.55	8.00	2.42	10.17	9.00	3.55	3.00
Crocker's Special Potato Manure	1.64	1.70	3.34	3.29	4.55	2.36	6.91	6.00	1.22	8.13	7.00	10.60	10.00
Packer's Union Animal Corn	1.46	1.27	2.73	2.47	6.35	2.71	9.06	9.00	2.74	11.80	10.00	2.41	2.00
Packer's Union Gardeners' Complete Manure	1.15	1.32	2.47	2.47	4.56	2.04	6.60	6.00	1.36	7.96	7.00	10.20	10.00
Armour Fertilizer Co., Baltimore, Md.													
Bone, Blood and Potash	2.23	1.41	3.64	4.11	5.67	2.98	8.58	8.00	.84	9.42	8.50	6.96	7.00
Complete Manure	1.84	1.47	3.31	3.30	4.65	1.55	6.20	6.00	1.37	7.57	6.50	10.33	10. 0
Fruit and Root Crop Special	.63	1.17	1.80	1.65	5.58	2.64	8.22	8.00	.59	8.81	8.50	5.16	5.00
Grain Grower	.59	1.07	1.71	1.65	6.41	1.81	8.22	8.00	.82	9.04	8.50	2.44	2.00
High Grade Potato	.67	1.02	1.69	1.65	6.10	2.69	8.79	8.00	1.07	9.86	8.50	10.64	10.00
Truckers' Special	2.03	1.31	3.34	3.29	2.97	3.04	6.01	6.00	.43	6.44	6.50	10.00	10.00

Composition of Commercial Fertilizers Sampled and Analyzed in 1912.—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
BOWKER FERTILIZER CO., Boston, Mass.													
Bowker's 14 % Acid Phosphate	.....	.....	.....	.....	12.43	2.73	15.16	14.00	.66	15.82	15.00	.....	.....
Bowker's Corn Phosphate	1.14	1.29	2.43	1.65	6.13	2.46	8.59	8.00	1.94	10.53	9.00	2.03	2.00
Bowker's Early Potato Manure	2.13	1.18	3.31	3.29	5.48	3.02	8.50	8.00	2.06	10.56	9.00	7.87	7.00
Bowker's Farm and Garden Phosphate	1.04	.80	1.84	1.65	5.47	2.92	8.39	8.00	1.50	9.89	9.00	2.29	2.00
Genuine German Kainit	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	13 85	12.60
Bowker's Hill and Drill Phosphate	1.58	.89	2.47	2.47	7.41	2.02	9.43	9.00	1.74	11.17	10.00	2.21	2.00
Bowker's Market Garden Fertilizer	1.22	1.26	2.48	2.47	4.33	2.06	6.39	6.00	1.21	7.60	7.00	10.47	10.00
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.40	50.00
Nitrate of Soda	.....	.....	15.48	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bowker's Phosphate with Potash	.....	.....	.....	.....	1.60	8.09	9.69	10.00	3.16	12.85	11.00	1.42	2.00
Bowker's Potash or Staple Phosphate	.41	.73	1.14	.82	5.77	2.90	8.67	8.00	1.57	10.24	9.00	3.19	3.00
Bowker's Potato and Vegetable Fertilizer	1.12	1.47	2.59	2.47	7.16	2.35	9.51	8.00	1.81	11.32	9.00	4.52	4.00
Bowker's Potato and Vegetable Phosphate	1.11	.96	2.07	1.65	6.35	2.03	8.38	8.00	2.15	10.53	9.00	2.65	2.00
Bowker's Pulverized Sheep Manure	.38	1.87	2.25	1.25	.....	.....	.....	.....	.....	1.78	1.50	2.25	2.00
Bowker's Pure Unleached Canada Hardwood Ashes	.....	.....	.....	.....	.....	.....	.....	.....	.....	1.34	1.00	3.53	4.00
Stockbridge Special Complete Manure for Corn and Grain Crops	2.03	.78	2.81	3.29	6.82	2.51	9.53	10.00	1.52	11.05	11.00	6.55	7.00
Stockbridge Special Complete Manure for Potatoes and Vegetables	1.64	1.67	3.31	3.29	4.56	2.87	7.43	6.00	1.33	8.76	7.00	9.99	10.00
Stockbridge Special Complete Manure for Seeding Down, Permanent Dressing and Legumes	1.84	.65	2.49	2.47	3.57	2.87	6.44	6.00	2.09	8.53	9.00	10.08	10.00
Stockbridge Special Complete Manure for Top-Dressing and for Forcing	1.58	2.71	4.29	4.94	3.22	2.21	5.43	4.00	1.22	6.65	6.00	6.38	6.00
Sulphate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.00	48.00
Bowker's Sure Crop Bone Phosphate	.18	.76	.94	.82	4.67	3.33	8.00	8.00	3.23	11.23	9.00	2.68	2.00

JOSEPH BRECK & SONS, Boston, Mass.													
Pulverized Sheep Manure	.42	2.27	2.75	2.25	.....	.....	.....	.....	.....	1.60	1.50	1.96	1.50
BUFFALO FERTILIZER CO. Buffalo, N. Y.													
Bone Meal	.....	.....	3.18	2.90	.....	.....	.....	.....	.....	24.40	22.00	.....	.....
Extra Phosphate and Potash	.....	.....	.....	.....	7.26	2.55	9.81	10.00	.70	10.51	11.00	8.18	8.00
Celery and Potato Special	.91	.73	1.78	1.60	1.99	6.22	8.21	8.00	1.52	9.73	9.00	9.88	10.00
Farmers' Choice	.80	.53	1.33	.80	5.75	3.14	8.89	8.00	.92	9.81	9.00	5.12	5.00
Fish Guano	.43	.52	.95	.80	4.93	4.08	9.01	9.00	1.80	10.81	10.00	2.21	2.00
High Grade Manure	2.03	.57	2.60	3.30	5.82	3.01	8.83	7.00	.86	9.69	8.00	8.76	10.00
New England Special	.04	2.03	2.06	1.60	4.97	4.03	9.00	9.00	1.97	10.97	10.00	6.04	5.00
Top Dresser	2.91	1.70	4.61	5.70	2.70	3.45	6.15	6.00	2.87	9.02	7.00	5.74	5.00
Vegetable and Potato	1.15	.95	2.10	2.40	6.23	2.82	9.05	8.00	1.40	10.45	9.00	7.52	7.00
THE COE-MORTIMER CO., New York City.													
E. Frank Coe's Celebrated Special Potato Fertilizer	.07	1.70	1.77	1.65	6.25	2.46	8.71	8.00	1.89	10.60	9.00	4.60	4.00
E. Frank Coe's Columbian Corn and Potato Fertilizer	.14	1.53	1.67	1.23	5.80	2.70	8.50	8.50	2.02	10.52	9.50	2.84	2.50
E. Frank Coe's Excelsior Potato Fertilizer	1.57	.70	2.23	2.47	5.56	2.95	8.51	7.00	1.58	10.09	8.00	7.63	8.00
E. Frank Coe's Extra Special Potato Fertilizer and Fruit Grower	.97	1.03	2.00	1.65	6.90	3.07	9.97	8.00	1.46	11.43	9.00	8.80	10.00
E. Frank Coe's Famous Prize Brand Grass and Grain Fertilizer	.....	.....	.....	.....	7.42	2.95	10.3	10.00	1.52	11.89	11.00	2.62	2.00
E. Frank Coe's Gold Brand Excelsior Guano	1.02	1.55	2.57	2.47	6.60	2.33	8.93	8.00	1.86	10.79	9.00	6.00	6.00
E. Frank Coe's High Grade Ammoniated Bone Superphosphate	.91	1.19	2.10	1.85	6.10	2.95	9.05	8.00	2.15	11.20	9.00	3.65	3.00
E. Frank Coe's New England Corn and Potato Fertilizer	.03	.99	1.02	.80	3.50	4.00	8.01	7.50	1.51	9.52	8.50	3.36	3.00
E. Frank Coe's Red Brand Excelsior Guano for Market Gardening	1.78	1.50	3.28	3.80	5.86	2.66	8.52	8.00	1.95	10.47	9.00	7.77	7.00
E. Frank Coe's Special Grass Top-Dressing	3.45	1.60	5.05	4.94	2.64	1.91	4.55	4.00	.80	5.35	5.00	3.46	3.00
E. Frank Coe's XXV Ammoniated Bone Phosphate	.66	.32	.98	.80	7.62	2.69	10.31	8.50	.81	11.15	9.50	2.40	1.50
Nitrate of Soda	.....	.....	15.78	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sulphate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.00	48.00
Thomas Phosphate Powder	.....	.....	.....	.....	.....	.....	.....	.....	.....	17.05	17.00	.....	.....

Composition of Commercial Fertilizers Sampled and Analyzed in 1912.—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found,	Guaranteed.	Found.	Guaranteed.
ESSEX FERTILIZER CO., Boston, Mass.													
Essex Complete Manure for Corn, Grain and Grass	1.43	1.90	3.33	3.28	4.32	2.39	6.71	6.00	.48	7.19	7.00	10.52	10.00
Essex Complete Manure for Potatoes, Roots and Vegetables	1.54	1.74	3.28	3.28	4.50	1.63	6.13	6.00	.90	7.03	7.00	10.50	10.00
Essex Market Garden Potato Manure	1.21	.88	2.09	2.00	6.82	1.73	8.55	8.00	1.52	10.07	9.00	5.43	5.00
Essex XXX Fish and Potash for All Crops	.84	1.17	2.01	2.00	6.70	1.76	8.46	8.00	.71	9.17	9.00	3.19	3.00
THE HUBBARD FERTILIZER CO., Baltimore, Md.													
Hubbard's Crop Grower	.80	.29	1.09	1.00	1.97	7.35	9.32	8.00	1.39	10.71	9.00	2.44	2.00
Hubbard's Farmers' IXL	1.28	.38	1.66	1.64	2.07	6.27	8.34	8.00	1.10	9.44	9.00	2.72	2.00
Hubbard's Royal Ensign for Corn and Grain	1.43	1.06	2.49	2.46	3.08	4.70	7.78	8.00	1.57	9.35	9.00	4.14	4.00
Hubbard's Special Potato Fertilizer	1.67	1.50	3.17	3.28	1.34	4.32	5.66	6.00	2.04	7.70	7.00	10.33	10.00
Hubbard's 10 % Potash Guano	1.88	.67	2.55	2.46	1.32	1.70	6.02	6.00	1.87	7.89	7.00	10.56	10.00
LISTER'S AGRICULTURAL CHEMICAL CO., Newark, N. J.													
Lister's Grass and Grain Fertilizer	.....	.....	.....	.....	8.42	2.18	10.60	10.00	1.70	12.30	11.00	.62	2.00
Lister's High Grade Special for All Crops	1.35	.57	1.92	1.65	5.66	2.40	8.06	8.00	1.51	9.57	9.00	10.16	10.00
Lister's High Grade Special for Spring Crops	1.12	.71	1.83	1.65	6.40	2.04	8.44	8.00	1.15	9.59	9.00	10.17	10.00
Lister's Potato Manure	2.03	.73	2.76	3.29	4.83	2.89	7.72	8.00	2.80	10.52	9.00	6.81	7.00
Lister's Special Corn Fertilizer	.06	1.60	1.66	1.65	7.05	2.39	9.44	8.00	2.11	11.55	9.00	3.60	3.00

Lister's Special Potato Fertilizer	1.35	.51	1.86	1.65	5.81	2.98	8.79	8.00	2.03	10.82	9.00	3.88	3.00
Lister's Success Fertilizer	.73	.77	1.50	1.23	6.19	3.13	9.32	9.00	2.25	11.57	10.00	2.15	2.00
Lister's 10 % Potato Grower	2.06	.92	2.98	3.29	3.68	2.54	6.22	6.00	2.25	8.47	7.00	10.45	10.00
McQuestion & Lewis, Manchester, N. H.													
Acid Phosphate	.....	.....	.....	.....	14.65	2.37	17.02	16.00	.73	17.75	17.00	.....	.....
*Basic Slag	.....	.....	.....	.....	.....	.....	10.86	14.90	8.01	18.90	18.03	.....	.....
Ground Bone	.....	.....	2.70	2.69	.....	.....	.....	.....	.....	22.61	21.25	.....	.....
The National Fertilizer Co., Boston and New York.													
Chittenden's Ammoniated Bone Phosphate	.19	1.74	1.93	1.65	6.10	2.61	8.71	8.00	1.87	10.58	9.00	2.22	2.00
Chittenden's Complete Root and Grain Fertilizer	1.82	1.49	3.31	3.29	5.85	2.68	8.53	8.00	2.26	10.79	9.00	6.12	6.00
Chittenden's Eureka Potato Fertilizer	1.15	1.34	2.49	2.47	4.44	2.23	6.67	6.00	1.08	7.75	7.00	11.51	10.00
Chittenden's Potato Phosphate	1.22	1.10	2.32	2.06	4.46	2.22	6.68	8.00	1.30	7.98	9.00	6.28	6.00
The New England Fertilizer Co., Boston, Mass.													
New England Complete Manure	1.37	1.62	2.99	3.28	4.75	1.63	6.38	6.00	.89	7.27	7.00	10.33	10.00
New England Corn and Grain Fertilizer	.17	1.28	1.45	1.23	5.09	2.77	7.86	7.00	.98	8.84	8.00	2.47	2.00
New England Corn Phosphate	.10	1.54	1.64	1.64	6.04	2.34	8.38	8.00	1.49	9.87	9.00	3.23	3.00
New England High Grade Potato Fertilizer	1.07	1.49	2.64	2.46	7.04	1.40	8.44	8.00	.61	9.05	9.00	6.24	6.00
New England Market Garden Manure	1.44	2.66	4.10	4.10	5.67	1.82	7.49	7.00	.90	8.39	8.00	7.75	7.00
New England Potato Fertilizer	.55	1.51	2.06	1.64	5.14	2.63	7.77	7.00	.85	8.62	8.00	4.29	4.00
New England Potato Grower	1.16	1.41	2.57	2.46	5.09	1.73	6.82	6.00	.53	7.35	7.00	10.66	10.00
New England Superphosphate for All Crops	1.30	1.35	2.65	2.46	6.95	2.01	8.96	8.00	1.12	10.08	10.00	4.69	4.00
Nitrate Agencies Co., New York City.													
Basic Slag	.....	.....	.....	.....	.....	.....	.....	.....	.....	17.73	17.00	.....	.....
High Grade Acid Phosphate	.....	.....	.....	.....	10.44	4.07	14.51	14.00	1.85	16.36	15.00	.....	.....
Ground Blood	.....	.....	11.37	13.15	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ground Bone	.....	.....	3.78	2.46	.....	.....	.....	.....	.....	25.62	25.60	.....	.....
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.90	50.60
Nitrate of Soda	.....	.....	15.76	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sulphate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	49.10	48.00

Composition of Commercial Fertilizers Sampled and Analyzed in 1912.—Continued.

MANUFACTURER AND BRAND.	NITROGEN.				PHOSPHORIC ACID.							POTASH.	
			Total.				Available.			Total.			
	Inorganic.	Organic.	Found.	Guaranteed.	Soluble.	Reverted.	Found.	Guaranteed.	Insoluble.	Found.	Guaranteed.	Found.	Guaranteed.
PARMENTER & POLSEY FERTILIZER CO., Boston, Mass.													
Parmenter & Polsey Grain Grower	.21	.88	1.09	1.23	6.25	2.33	8.58	7.00	1.09	10.02	8.00	2.24	2.00
Parmenter & Polsey Plymouth Rock Brand for all crops.	1.05	1.46	2.51	2.45	6.75	2.21	8.96	8.00	.89	9.85	9.00	4.85	4.00
Parmenter & Polsey Potato Grower with 10% Potash	1.10	1.42	2.52	2.46	5.42	1.42	6.84	6.00	.58	7.42	7.00	10.37	10.00
Parmenter & Polsey Potato Fertilizer	.17	1.59	1.76	1.64	4.43	2.78	7.21	6.00	.86	8.07	7.00	6.66	6.00
Parmenter & Polsey Special Potato Fertilizer	1.43	1.71	3.14	3.28	6.68	1.62	8.30	8.00	.95	9.25	9.00	7.72	7.00
Ground Bone	.....	.....	3.22	2.47	.....	.....	.....	.....	.....	27.33	23.00	.....	.....
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.10	50.00
Nitrate of Soda	.....	.....	15.38	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
ROGERS & HUBBARD CO., Middletown, Conn.													
Complete Phosphate	.46	1.15	1.61	1.50	5.32	2.62	7.94	7.00	1.56	9.50	8.00	5.78	5.00
Grass and Grain	.59	2.03	2.62	2.20	.27	10.79	11.06	6.50	5.19	16.25	16.00	12.27	12.00
Pure Raw Knuckle Bone Flour	.....	.....	3.99	3.82	.....	.....	.....	.....	.....	24.82	24.70	.....	.....
New Market Garden Phosphate	.95	1.27	2.22	2.00	3.56	2.48	6.04	6.00	2.53	8.57	7.00	11.28	10.00
Oats and Top-Dressing	.....	.....	8.90	8.50	.....	8.99	8.99	4.50	1.94	10.93	8.00	8.98	8.00
Potato Phosphate	1.95	.21	2.16	2.00	6.43	2.94	9.37	9.00	1.42	10.79	10.00	5.29	5.00
Soluble Corn and General Crops Manure	1.29	1.21	2.50	2.50	2.46	5.37	7.83	6.00	1.38	9.21	8.00	8.66	8.00
Soluble Potato Manure	2.30	2.17	4.47	5.60	1.97	6.59	8.56	7.00	1.80	10.36	10.00	5.81	5.00
Soluble Tobacco Manure	2.62	2.38	5.00	5.00	1.63	7.10	8.73	7.00	2.41	11.14	10.00	10.31	10.00
J. W. SANBORN, Pittsfield, N. H.													
Sanborn's Chemical Fertilizer for Grass and Grain	2.00	2.73	4.73	4.85	4.17	2.19	6.36	4.50	.68	7.04	6.00	6.44	6.00
Sanborn's Chemical Fertilizer for Potatoes and Corn	1.42	1.91	3.33	3.30	6.54	1.93	8.47	7.00	1.54	10.01	9.50	8.09	8.00
Sanborn's Chemical Fertilizer for use in the hill	1.43	.96	2.39	2.30	4.27	3.58	7.85	7.00	4.42	12.27	11.50	4.76	3.75

SWIFT'S LOWELL FERTILIZER CO., Boston, Mass.													
Swift's Lowell Animal Brand for All Crops	.84	1.69	2.53	2.46	7.17	1.61	8.78	8.00	.82	9.60	9.00	4.29	4.00
Swift's Lowell Bone Fertilizer for Corn and Grain	.56	1.08	1.64	1.64	5.97	3.01	8.98	8.00	1.37	10.35	9.00	3.29	3.00
Swift's Lowell Cereal Fertilizer	.28	.70	.98	.82	5.27	2.01	7.28	7.00	.78	8.06	8.00	1.54	1.00
Swift's Lowell Empress Brand for Corn, Potatoes and Grain	.13	1.27	1.40	1.25	5.20	2.07	7.27	7.00	.76	8.03	8.00	2.29	2.00
Swift's Lowell Grass Mixture for Top-Dressing and Lawns	1.44	2.19	3.63	4.10	5.77	1.80	7.57	7.00	.93	8.50	8.00	6.96	6.00
Swift's Lowell Ground Bone	.....	.....	2.92	2.47	.....	.....	.....	.....	.....	25.68	23.00	.....	.....
Swift's Lowell Lawn Dressing	3.24	.64	3.88	4.10	6.88	1.10	7.98	7.00	.37	8.35	8.00	6.20	6.00
Swift's Lowell Market Garden Manure	1.51	2.24	3.75	4.10	5.72	1.50	7.22	7.00	1.00	8.22	8.00	6.10	6.00
Swift's Lowell Potato Manure	.49	1.51	2.00	1.64	5.52	2.19	7.71	7.00	.77	8.48	8.00	5.12	4.00
Swift's Lowell Potato Phosphate	1.05	1.27	2.32	2.46	6.56	1.83	8.39	8.00	.51	8.90	9.00	6.11	6.00
Swift's Special Potato Fertilizer	1.21	1.25	2.46	2.46	5.04	3.10	8.14	6.60	.58	8.72	7.00	10.41	10.00
Swift's Lowell Sterling Phosphate	.14	.87	1.01	.82	6.45	2.35	8.80	8.00	1.48	10.28	9.00	4.04	4.00
Swift's Superior Fertilizer with 10 % Potash	1.93	1.73	3.66	3.65	5.69	1.59	7.28	7.00	.80	8.08	8.00	10.81	10.00
Muriate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.70	50.00
Nitrate of Soda	.....	.....	15.92	15.00	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sulphate of Potash	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50.00	48.00
Swift's Lowell Acid Phosphate	.....	.....	.....	.....	9.82	3.24	13.06	12.00	1.03	14.09	14.00	.....	.....
WHITMAN & PRATT RENDERING CO., Chelmsford, Mass.													
Whitman & Pratt's Pure Ground Bone	.....	.....	2.59	2.47	.....	.....	.....	.....	.....	27.00	26.00	.....	.....

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